

**NEWLY DISCOVERED METEOR RADIANTS.** K. I. Povenmire<sup>1</sup> and H. Povenmire<sup>2</sup>, <sup>1</sup>215 Osage Dr. Indian Harbour Bch., FL 32937 [cpovenmire@cfl.rr.com](mailto:cpovenmire@cfl.rr.com), <sup>2</sup>Department of Space Science, Florida Institute of Technology, 215 Osage Dr. Indian Harbour Bch., FL 32937 [cpovenmire@cfl.rr.com](mailto:cpovenmire@cfl.rr.com).

**Introduction:** Since August 1975, an active campaign of double station photographic and image-intensified videography has been undertaken from the Cape Canaveral area. The area of the sky concentrated on was the constellation Pegasus. The primary purpose was for data gathering of the newly discovered Upsilon Pegasid meteor shower. One of the secondary discoveries was the identification of five active radiants which are not found in an extensive literature search. The reason for this is that the zenith hourly rate (ZHR) falls far below what the visual observer would notice. However, when the results of many years of photographic data is reduced, it is apparent that these radiants consistently produce meteors on a low level for many days each summer and continue to do so every year. Usually the rates are measured in meteors per night rather than meteors per hour. The names applied to these radiants are from the nearest naked eye star to the radiant.

**Beta Sagittarids:** Radiant R.A. 200°, Dec. -45°. Maximum about June 16. Apparent velocity approximately 34 km/s. These meteors are similar in appearance and velocity to the Geminids. In 1974, there were rates of 4 per hour with many in the negative magnitudes.

**Alpha Triangulids:** Radiant R.A. 23°, Dec.+31°. This location is about 5° east of Alpha Trianguli near the M33 galaxy. Maximum occurs about August 3. Characteristics: white and swift with little persistent train. Apparent velocity is approximately 60 km/s. Many are in the negative magnitudes.

**Phi Piscids:** Radiant R.A. 20°, Dec +23°. This is a long duration stream ranging from July 15 to August 20 or longer. Characteristics: bright, velocity similar to Perseids (60 km/s), orange in color, the two brightest (-3 and -7) left long, persistent trains. Probable maximum August 13. On August 13, 1985, rates exceeded 5 per hour.

**Gamma Piscids:** Radiant R.A. 351°, Dec. +4°. This radiant was first identified from a 1956 photograph by Povenmire. It was independently identified by amateur meteor observers in the 1970-80 period. The radiant seems to be active from August 14 to September 1 or longer. The maximum is almost in the center of the Circlet of Pisces nearest the naked eye star Gamma Piscium. Characteristics: some show exotic colors such as purple and violet, velocity similar to northern Delta Aquarids (41.0 km/s).

**Delta Andromedids:** On the night of August 19, 1982, the European Network photographed two fireballs. One was the great Upsilon Pegasid fireball EN

190882A. It also photographed a second fireball from a previously undetected radiant near Delta Andromedae. This second fireball, EN 190882B, had a radiant of approximately R.A. 12.85°, Dec. +32.20° (2000.0). The velocity was about 61.2 km/s. The magnitude of this fireball was approximately -6.5. These meteors probably come from a long period, retrograde comet with an aphelion near 107 AU. Since this fireball was photographed with multiple cameras, excellent orbital elements were obtained.

Later, while reviewing photographs of sporadic meteors recorded during the Upsilon Pegasid patrol, we found that several which came from this radiant.

**References:** [1] Povenmire H. (1980) *Fireballs, Meteors and Meteorites*, JSB Enterprises, Indian Harbour Bch., FL. [2] Kronk G.W. (1988) *Meteor Showers: A Descriptive Catalog*, Enslow Publishers Inc. Hillside, NJ.